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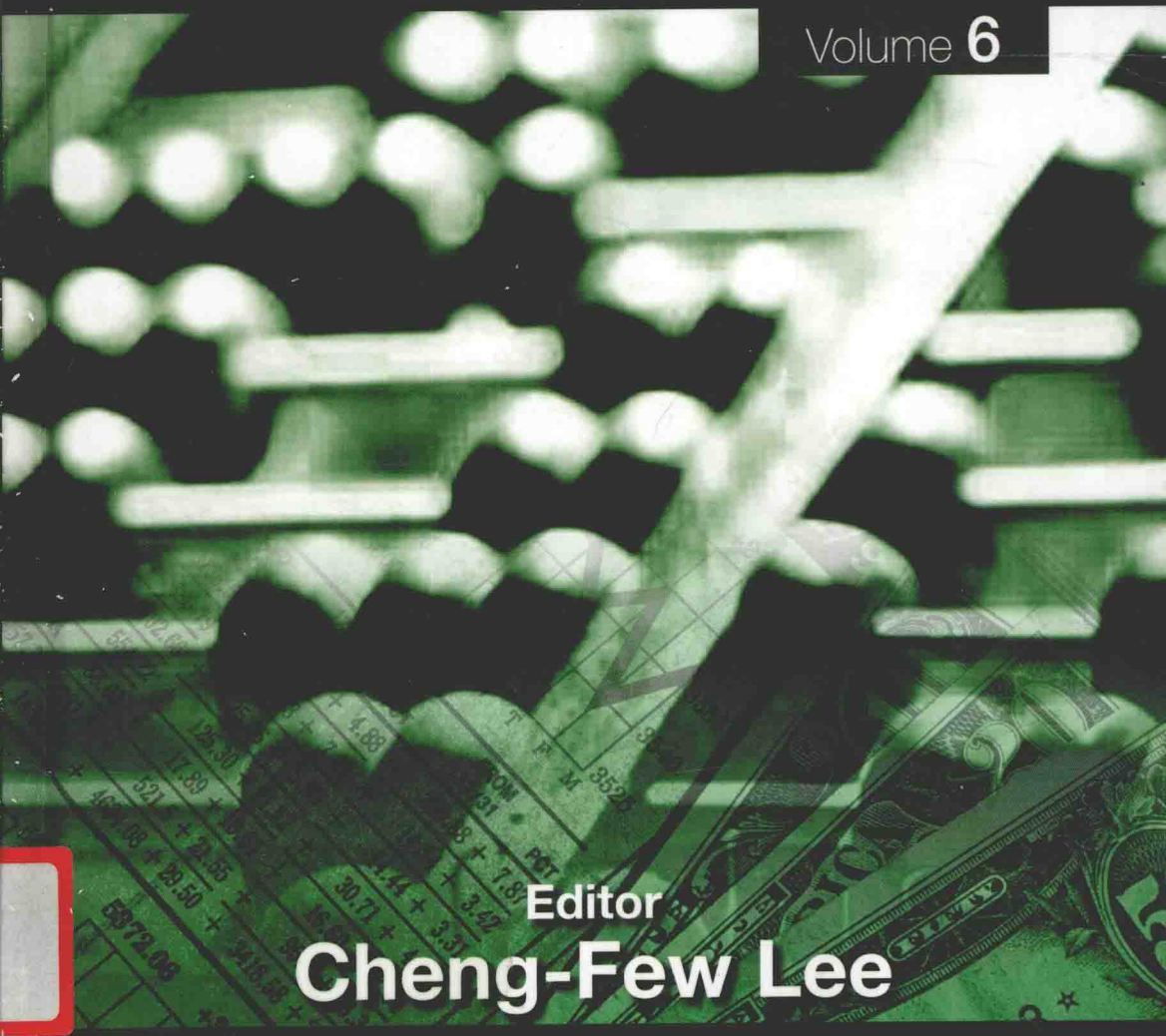
Volume 6



Editor

Cheng-Few Lee

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FINANCE AND ACCOUNTING

Volume 6

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Advances in Quantitative Analysis of Finance and Accounting
Editorial Board

Preface to Volume 6

Advances in Quantitative Analysis of Finance and Accounting is an annual publication designed to disseminate developments in the quantitative analysis of finance and accounting. The publication is a forum for statistical and quantitative analyses of issues in finance and accounting as well as applications of quantitative methods to problems in financial management, financial accounting, and business management. The objective is to promote interaction between academic research in finance and accounting and applied research in the financial community and the accounting profession.

The chapters in this volume cover a wide range of topics. In this volume there are 12 chapters, three of them are corporate finance and debt management: 1. *Collateral Constraints, Debt Management, and Investment Incentives,* 2. *Thirty Years of Canadian Evidence on Stock Splits, Reverse Stock Splits, and Stock Dividends*, and 3. *Corporate Capital Structure and Firm Value: A Panel Data Evidence From Australia's Dividend Imputation Tax System.* There are two of the other nine chapters which cover earnings management: 1. *Why is the Value Relevance of Earnings Lower for High-Tech Firms?* and 2. *Earnings Management in Corporate Voting: Evidence from Anti-Takeover Charter Amendments.*

Three of the other seven chapters discuss equity markets: 1. *Evaluating the Robustness of Market Anomaly Evidence,* 2. *Intraday Volume–Volatility Relation of the DOW: A Behavioral Interpretation*, and 3. *Determinants of Winner–Loser Effects in National Stock Markets.* Two of the other four chapters analyze options and futures: 1. *The Pricing of Initial Public Offerings: An Option Apporach* and 2. *The Momentum and Mean Reversion Nikkei Index Futures: A Markov Chain Analysis.*

The remaining two chapters are related to portfolio diversification and quadratic programming: 1. *A Concave Quadratic Programming Marketing Strategy Model with Product Life Cycles* and 2. *Corporate Capital Structure and Firm Value: A Panel Data Evidence from Australia's Dividend Imputation Tax System.* In sum, this annual publication covers corporate finance and debt management, earnings management, options and futures, equity market, and portfolio diversification. Therefore, the material covered in this publication is very useful for both academician and practitioner in the area of finance.

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Contents

Chapter 1

Collateral Constraints, Debt Management, and Investment Incentives

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This chapter analyses the hedging decisions of an emerging economy which is exposed to market risks and whose debt contract is subject to collateral constraints. Within a sovereign debt model with default risk and endogenous collateral, the optimal choice of hedging instruments are studied when both futures and nonlinear derivatives are available. It is examined in which way the hedging policy is affected by the cost of default and the financial constraints of the economy and some implications are provided in terms of resource allocation.

Keywords: Hedging strategies; financial constraints; default cost; endogenous collateral; emerging markets.

1. Introduction

Emerging markets have been exposed to remarkable market risks and it is by now folk wisdom that, if given a choice, they should be endowed with instruments of hedging against downside risks (see Caballero, 2003; Caballero and Panageas, 2003; Shiller, 2003). Finding out which factors are the fundamental source of volatility for each country — for example, the prices of oil for Mexico, of coffee for Brazil, of semiconductors for Korea, of copper for Chile, and so on — is recognized as a crucial step in order to construct the appropriate hedging instruments, which will be contingent on observable variables (Caballero, 2003). Yet, it remains to be answered the question concerning the proper application of derivative securities that can be used to construct hedging strategies and the optimal hedging policy. The purpose of this chapter is to examine the hedging decisions of an economy which is exposed to market risks and is subject to collateral constraints. The model considered here is a sovereign debt one, with default risk and endogenous collateral.

Collateral is typically used to secure loans. Since the article by Kiyotaki and Moore (1997), it has been pointed out that if collateral is endogenous, then the debt capacity of firms is altered, causing fluctuations in output (Krishnamurthy, 2003). In this chapter, a model is discussed where the use of

hedging instruments may affect collateral values and thus, the debt capacity of the debtor.

In most literature relating to the 1980s debt crisis and following the Bulow and Rogoff models (1989, 1991), a given proportion of output or exports are assumed to be available for repayment of outstanding debt. This means that repayment is modeled as an output tax and actual repayment is the minimum of this amount and debt. Alternatively, in other models (Eaton and Gersowitz, 1981; Eichengreen, 2003; Thomas, 2004) a fixed sanction is established in the case of default, which is not a direct claim on the country's current resources and is not received by the creditors, but may represent the future losses due to diminished reputation. In this chapter, a model is developed where the amount of repayment by the debtor country is determined endogenously by an optimizing choice of the debtor and where the two above mentioned aspects of the repayment contract are present. Indeed, the debt contract is a collateralized one, where profits on internationally tradable goods can be used for repayment, constituting the endogenous collateral; additionally, in the case of default, a sanction is imposed which affects nontradable goods, which represents the cost to the debtor of defaulting. Within this framework, hedging may be driven by the desirability to reduce expected default costs. As Smith and Stulz (1985) have shown, by hedging a debtor is able to reduce the likelihood of default by increasing the income it gets in the downside.

The present chapter is most related to the literature on risk management. Recently, a few articles have studied the optimal choice of hedging instruments of a firm when either futures or options are available. It has been shown that in the model of competitive firms with output price uncertainty, where all input decisions are made simultaneously prior to resolution of uncertainty, hedging with futures does provide a perfect hedge and there is no scope for nonlinear instruments such as options as pure hedging instruments. Albuquerque (2003) characterizes optimal currency hedging in three cases, namely in the presence of bankruptcy costs, with a convex tax schedule, and in the case of a loss-averse manager. In all these cases, he shows that futures dominate options as hedging instruments against downside risk. Batterman *et al.* (2000) study the optimal choice of hedging instruments of an exporting firm exposed to exchange rate risk, when both currency futures and standard options are available. They show that the hedge effectiveness of futures is larger than that of options.

Wong (2003) studies the optimal hedging decision of an exporting firm which faces hedgeable exchange rate risk and nonhedgeable price risk, when